

FORM PTO-1390
(REV 10-2000)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

**TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C.371**

ATTORNEY'S DOCKET NUMBER
HHL-032US

U.S. APPLICATION NO. (If known, see 37 CFR 1.5)

09/889916

INTERNATIONAL APPLICATION

PCT/DE00/04134

INTERNATIONAL FILING DATE

21 November 2000 (21.11.00)

PRIORITY DATE CLAIMED

24 November 1999 (24.11.99)**TITLE OF INVENTION METHOD AND DEVICE FOR THE PRODUCTION OF LIGHT-METAL PELLETS**

APPLICANT(S) FOR DO/EO/US

Christian BOEHNKE

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C.371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☐ This is an express request to promptly begin national examination procedures (35 U.S.C. 371(f)).
4. ☐ The US has been elected by the expiration of 19 months from the priority date (PCT Article 31).
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☐ is attached hereto (required only if not communicated by the International Bureau).
 - b. ☒ has been communicated by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ An English language translation of the International Application as filed (35 U.S.C 371(c)(2)) (**8 sheets**).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
 - a. ☐ are attached hereto (required only if not communicated by the International Bureau).
 - b. ☐ have been communicated by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☒ have not been made and will not be made.
8. ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)). (**unexecuted**) (**3 sheets**)
10. ☐ An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98. (**2 sheets**) with **Form PTO-144** (**1 sheet**) along with copies of references (**14 sheets**).
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included
13. ☒ A **FIRST** preliminary amendment (**4 sheets**) with attached **Version to Show Markings** (**3 sheets**).
 - ☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.

16. ☒ Other items or information: **Transmittal Letter with authorization to charge our Deposit Account in the amount of \$990.00 for filing fee based on Large Entity (2 sheets in duplicate); PCT International Published Application in German (WO 01/38021 A1) (with International Search Report) (20 sheets); Certificate of Express Mailing (1 sheet); and Return Postcard.**

09/889916

PCT/DE00/04134

17. ☒ The following fees are submitted:**BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)) (a/o November 1, 2000):**

Neither international preliminary examination fee (37 CFR 1.482)
nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO
and International Search Report not prepared by the EPO or JPO.....\$1000

International preliminary examination fee (37 CFR 1.482) not paid to
USPTO but International Search Report prepared by the EPO or JPO\$860

International preliminary examination fee (37 CFR 1.482) not paid to USPTO but
international search fee (37 CFR 1.455(a)(2)) paid to USPTO\$710

International preliminary examination fee paid to USPTO (37 CFR 1.482)
but all claims did not satisfy provisions of PCT Article 33(1)-(4).....\$690

International preliminary examination fee paid to USPTO (37 CFR 1.482)
and all claims satisfied provisions of PCT Article 33(1)-(4).....\$100

ENTER APPROPRIATE BASIC FEE AMOUNT =**CALCULATIONS** PTO USE ONLY

\$860.00

Surcharge of **\$130.00** for furnishing the oath or declaration later than ☒ 20 ☐ 30
months from the earliest claimed priority date (37 CFR 1.492(e)).

\$130.00

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	9 -20 =	0	X \$18.00	\$0	
Independent claims	1 -3 =	0	X \$80.00	\$0	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ 270.00	\$0	

TOTAL OF ABOVE CALCULATIONS =

\$990.00

☒ Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above
are reduced by 1/2.

SUBTOTAL =

\$990.00

Processing fee of **\$130.00** for furnishing the English translation later than ☐ 20 ☐ 30
months from the earliest claimed priority date (37 CFR 1.492(f)). +

\$

TOTAL NATIONAL FEE =

\$990.00

Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be
accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property +

\$

TOTAL FEES ENCLOSED =

\$990.00

Amount to be: refunded	\$
charged	\$

- a. ☐ A check in the amount of \$_____ to cover the above fees is enclosed.
- b. ☒ Please charge my Deposit Account No. **12-0080** in the amount of **\$990.00** to cover the above fees.
A duplicate copy of this sheet is enclosed.
- c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit
any overpayment to Deposit Account No. **12-0080**. A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:
Anthony A. Laurentano, Esq.
LAHIVE & COCKFIELD, LLP
28 State Street
Boston, Massachusetts 02109
United States of America
(617) 227-7400
Date: 23 July 2001

SIGNATURE

Anthony A. Laurentano

NAME

38,220

REGISTRATION NUMBER

IN THE UNITED STATES PATENT DESIGNATED OFFICE (DO/US)
(National Phase of International App.: PCT/DE00/04134, W/O 01/38021 A1)

In re the
application of: **Christian BOEHNKE**

International Application No.: **PCT/DE00/04134**

International Filing Date: **November 21, 2000**

U.S. Serial No.: **Not Yet Assigned**

Filed: **Herewith**

For: **METHOD AND DEVICE FOR THE
PRODUCTION OF LIGHT-METAL PELLETS**

Attorney Docket No.: **HHI-032US**

BOX PCT

Commissioner for Patents
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Dear Sir:

Preliminary to examination of the above-referenced patent application, please
amend the enclosed above-titled International patent application as follows.

In the Specification

Page 1, line 2, after the title, insert the following "**Background of the
Invention**".

Page 1, line 4, please replace the paragraph with the following:

--The present invention relates to a method and device for producing light-metal
pellets.--

Page 1, line 26, insert the following title: "**Summary of the Invention**".

Page 1, lines 31-33, please delete this paragraph.

Page 4, line 9, insert the following title: "**Brief Description of the Drawings**".

Page 4, line 18, please insert the following title: "**Description of Illustrated Embodiment**".

In the Claims

Please amend claims 1-9 as follows:

1. (Amended) A method for producing light-metal pellets, comprising feeding molten light metal into a gap between two cooling bodies, dividing the molten light metal into pellets of specified size along attenuation lines or by completely separating them before the pellets solidify, and adding fibers, particles or similar additives before the molten light metal enters the gap.
2. (Amended) The method according to claim 1, comprising synchronously moving the cooling bodies from an initial arrangement in which surfaces of the cooling bodies are spaced a certain distance from each other, into a second arrangement in which the surfaces move close together to form the gap, and subsequently move back into the spaced arrangement.
3. (Amended) The method according to claim 2, wherein in the step of moving, the motion from the initial to the third arrangement of the cooling bodies occurs from top to bottom, further comprising the step of feeding the molten light metal into a funnel formed between the cooling bodies.

4. (Amended) The method according to claim 1, comprising generating a strip of connected pellets exiting the cooling bodies, such that the strip is not broken up into individual pellets until a later stage.

5. (Amended) The method of claim 1, wherein the light metal comprises magnesium.

6. (Amended) A device for implementing the method according to claim 1, wherein the cooling bodies comprise depressions on opposing faces such that the molten light metal between the two cooling bodies is formed into pellets of the shape determined by the depressions.

7. (Amended) A device for working the method according to claim 1, wherein the cooling bodies have the form of conveyor belts with two reversing points each, and a cooling zone provided between them along which the two cooling bodies form the gap or are disposed in contact with one another.

8. (Amended) Utilization of a device comprising two cooling bodies having ridges projecting from opposing faces, such that the molten light metal between the two cooling bodies are formed into pellets, which are separated by the ridges, to work the method according to claim 1.

9. (Amended) Utilization of a device comprising two cooling bodies designed as two wheels or rollers which are arranged adjacent to or in contact with one another so as to form a gap between circumferential edges, to work the method according to claim 1.

REMARKS


Applicant amends the specification to address minor formal matters, such as introducing appropriate section headers. Applicant also amends the claims to remove multiple dependencies, to provide proper antecedent basis, and to address other matters of form. The foregoing amendments introduce no new matter and are not related to issues of patentability.

Entry of the foregoing Preliminary Amendment is respectfully in order and requested.

If there are any questions regarding the amendments to the application, we invite the Examiner to call Applicant's representative at the telephone number below.

Respectfully submitted,

LAHIVE & COCKFIELD, LLP


Anthony A. Laurentano
Registration No. 38,220
Attorney for Applicant

28 State Street
Boston, MA 02109
(617) 227-7400

Date: 7/23/01

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VERSION TO SHOW MARKINGS WITH CHANGES MADE

In the Specification:

Page 1, lines 3-4:

The present invention relates to a method and device for producing light-metal pellets ~~according to the preamble of Claim 1 and a device for working this method.~~

In the Claims:

Please amend claims 1-9 as follows:

1. (Amended) A ~~Method~~ method for producing light-metal pellets, comprising feeding in ~~which molten light metal is fed into a gap between two cooling bodies, and in which~~ dividing the molten light metal is divided up into pellets of specified size along ~~attenuation lines or by completely separating them before it completely solidifies~~ the pellets solidify, and characterized in that adding fibers, particles or similar additives are ~~added before the molten light metal (3) enters the gap (4).~~

2. (Amended) The ~~Method~~ method according to claim 1, characterized in that comprising ~~synchronously moving the cooling bodies (1) move synchronously and are starting from~~ synchronously moving the cooling bodies (1) move synchronously and are starting from ~~an initial arrangement in which their surfaces of the cooling bodies are spaced a certain~~ distance from each other, then move into a second arrangement in which their the ~~surfaces move close together to form the gap (4), and subsequently move back into the~~ spaced arrangement.

3. (Amended) The ~~M~~A method according to claim 2, wherein in the step of moving, ~~characterized in that~~ the motion from the initial to the third arrangement of the cooling bodies (1) occurs from top to bottom, ~~further comprising the step of feeding the molten light metal (3) being fed into a funnel (2) formed between the cooling bodies (1).~~

4. (Amended) The ~~M~~A method according to ~~one of the foregoing claims~~ claim 1, ~~comprising generating~~ characterized in that first a strip of connected pellets exiting from the cooling bodies is ~~generated which consists of connected pellets, such and that this~~ the strip is not broken up into individual pellets until a later stage.

5. (Amended) The ~~M~~A method ~~according to one of the foregoing claims~~ of claim 1, ~~characterized in that~~ wherein the light metal comprises magnesium ~~is utilized as the light metal.~~

6. (Amended) A ~~D~~A device for implementing the method according to ~~one of the foregoing claims~~ claim 1, ~~characterized in that~~ wherein the cooling bodies (1) ~~have comprise~~ depressions on ~~their~~ opposing faces such that the molten light metal (3) ~~between the two cooling bodies (1) may be is~~ formed into pellets of the shape determined by the depressions.

7. (Amended) A ~~D~~A device for working the method according to ~~one of claims 1 through 5~~ claim 1, ~~characterized in that~~ wherein the cooling bodies (1) have the form of conveyor belts with two reversing points each, and a cooling zone provided between them along which the two cooling bodies (1) form the gap (4) or are disposed in contact with one another.

8. (Amended) Utilization of a device ~~in which the~~ comprising two cooling bodies (1) ~~have having~~ ridges (7) projecting from ~~their~~ opposing faces, such that the molten light metal (3) ~~between the two cooling bodies (1) may be are~~ formed into pellets (8), which

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METHOD AND DEVICE FOR PRODUCING LIGHT-METAL PELLETS

The invention relates to a method according to the preamble of Claim 1 and a device for working this method.

German patent DE PS 823 778 discloses such a method and device for light and heavy metals, while DE PS 1 508 800 relates to very high-melting-point materials such as uranium carbide.

According to the invention, the term "pellets" signifies not only particles which are produced from a solid base material such as sintered compact produced from powder, but also as used herein specifically comprises particles which have been produced from liquid material. In contrast to the term "granulate" which may have an essentially irregular shape, the term "pellets" which have by comparison a much more uniform shape is used according to the invention. The following discussion deals specifically with the production of magnesium pellets, however, the invention is not restricted to the material magnesium.

Where the workpieces fabricated from the pellets, e.g., cast or injection-molded workpieces, are components subject to high stresses or loads, reinforcing materials such as fibers, particles or similar additives may be added to the light metal, which additives are designed to enhance, for example, the resistance of the workpiece to abrasion, fracture, bending, or its fatigue strength under vibratory stress. The workpiece may be excessively weakened, however, if these additives are unevenly distributed within the workpiece allowing undesirable voids to form.

The object of the invention is to improve a generic method to reliably assist in achieving the most uniform characteristics possible for the workpiece fabricated from the pellets, and to provide a device suited to this purpose.

This fundamental object of the invention is achieved by a method with the characteristic features of Claim 1. Devices suitable for implementing the method are found in Claims 6 through 9.

The invention proposes, in other words, adding fibers, particles or similar additives to the molten light metal so that instead of adding such additives only at the stage of the injection or casting mold, the pellets already contain the additives at the

time of subsequent processing. This approach ensures a uniform distribution of the additives which help to preclude additive voids within the workpiece.

5 The method provides for producing the generated, solidified material in a form so thin that it may be reduced easily and with low input of energy – with the result that due to the low material thickness and resulting ease of reduction, pellets of precise dimensions may be produced. This result may be achieved by generating rod or wire material of extremely small cross-sectional dimensions called “spaghetti.”

10 Provision can be made that a body exiting the cooling body be generated consisting of connected pellets and that this body only later be separated into individual pellets. This approach allows for the space-saving transport of the pellets in which these are incorporated in a waffle, mat or sheet, or rolled-up strip. This type of transport may eliminate the need for repackaging which would be required for separate pellets, e.g. in
15 cartons or bags. In addition, this approach facilitates the precise metering of the connected pellets when they are fed into a processing machine since, for example, the strip may be unrolled pellet by pellet, or the sheet may be fed in stages.

20 Separation into separate individual pellets may be disconnected both by location and time from the production of such bodies, e.g., in a special reduction unit placed upstream from the processing machine, or reduction may be performed by feeding the sheet or strip into the processing machine where these are broken up into individual pellets by a screw conveyor provided in the machine, this process being facilitated by attenuation lines.

25 The molten light metal is passed between two cooling bodies which form a narrow gap in which the cooling effect is especially intensive, a function of the quantity of molten metal adjacent to the cooling bodies, and in which the light metal may be stamped or cut. Solidification may proceed here at least at the surface of the
30 material to the extent of generating an enclosed skin and thus providing shape.

In addition to effecting the process by regulating the speed of the two cooling bodies, a controlled management of molten metal or solidifying pellets may be achieved by controlling the cooling of the two cooling bodies, e.g., by means of a
35 cooling medium passing through the cooling bodies.

Further complete solidification may be achieved by cooling in air, assisted as required by blowing with compressed air, or by passing the at least partially solidified material into a cooling fluid, or by subjecting it to a drip or spray of cooling fluid. Especially intense cooling may be provided so as to intentionally generate material
5 at the most brittle level possible, thereby facilitating subsequent breakup given the above-described situation in which the pellets are fabricated as one continuous body.

It is advantageous to have the cooling bodies be synchronously movable such that the light metal is not simply fed through subject to the friction of the cooling
10 bodies but the cooling bodies simultaneously form a transport device for the light metal. By employing a rounded or beveled shape or arrangement for the cooling bodies, a receiving chamber is created for the molten light metal, this chamber subsequently leading to the afore-mentioned gap. The shaping of the liquid or partially solidified light
15 molten light metal, or the complete separation of light metal either partially or completely solidified, may take place in this gap.

It is advantageous to design the cooling bodies as two adjacent wheels or rollers, the circumferential faces of which are placed very close together or are even in
20 contact. This design forms a funnel between the two cooling bodies such that, in a single operation, the liquid molten magnesium may be fed into this funnel, then passed by the moving cooling bodies into the gap between both cooling bodies, and there shaped or divided. As the two cooling bodies move further, their two surfaces again separate, thereby allowing the magnesium pellets to drop or the magnesium strip provided with
25 attenuation lines to be passed downward where it is easily reduced to pellets of a standardized size.

If required, the surface of both rollers may be designed such that both forms of material separation are provided. Predetermined sections of the roller surface may receive the form of a continuous strip, waffle, mat or the like with pellets, an actual
30 separation ridge being provided in the surface of the roller so that mats, waffles, strips or the like of predetermined size containing the pellets are produced rather than an endless strip, mat or the like. For this purpose, the separating ridge may effect a complete material break in the molten metal or pellets produced such that the dimensions of these continuous pellet arrangements are limited and preset. Especially advantageous is the
35 fact that if the pellets do not require immediate processing in a melting unit, these continuous pellet arrangements of predetermined dimensions allow for easy subsequent

handling, for example, automated packing of these "clusters," either individually or multiply in a packing unit.

5 An alternative to the design using two wheels is one using a link-chain-type or conveyor-belt-type design for the two cooling bodies, thereby easily creating a comparatively long gap in which the two cooling bodies are adjacent to one another and creating an intensive cooling and solidification effect, and also achieving a correspondingly high throughput.

10 The following discussion presents embodiments of the invention in more detail based on the drawing.

 Fig. 1 shows in schematic form an initial embodiment of a device for producing magnesium pellets.

15 Fig. 2 shows, also in schematic form, a second embodiment of a device for producing magnesium pellets.

 Fig. 1 shows two roller-shaped cooling bodies 1 where funnel 2 is provided for above and between both cooling bodies 1 to feed molten light metal 3 which is designated hereafter as molten magnesium simply as an example. The two cooling bodies 1 are driven counter-rotationally and synchronously relative to one another, and may be cooled by a cooling unit not shown. The magnesium solidifies at the surface of cooling bodies 1, and when molten magnesium 3 enters gap 4, created as a narrowing between both cooling bodies 1, a narrow magnesium strip 5 is produced which has solidified sufficiently at least at its outer surface to allow it then to be drawn from the device.

 Shown schematically on magnesium strip 5 are attenuation lines 6 which have been stamped into magnesium strip 5. These attenuation lines 6 are generated by ridges 7 shown schematically which are provided on the surfaces of cooling bodies 1.

 For the sake of simplifying the drawing, no concavities or projections are visible on the edge of magnesium strip 5 and cooling bodies 1; and additionally, attenuation lines 6 and ridges 7 are drawn as straight and continuous, thus producing rectangular pellets. Other pellet forms of differing shape are possible and may be chosen

specifically as appropriate to the alloy composition of the molten metal selected and the intended application of the pellets.

5 Attenuation lines 6 establish defined fracture lines of magnesium strip 5 so that magnesium strip 5 may be processed, using little energy, to create pellets 8 in a downstream crushing or deformation device not shown. Magnesium strip 5 simply represents a connected arrangement of these pellets 8 before these pellets 8 are subsequently broken up.

10 Alternatively, ridges 7 may project far enough above cooling bodies 1 that interacting with the surface of each opposing cooling body 1 or with a ridge 7 of the other cooling body, a complete separation of the magnesium is effected such that, below gap 4, individual separated pellets 8 fall from the device rather than a continuous magnesium strip 5 being created.

15 A further alternative embodiment has depressions rather than ridges 7 on the surface of the cooling bodies. The depressions of the two cooling bodies 1 here function as molds, and as a result, pellets are generated, the form of which is determined by the shape of the depressions.

20 A possible feature here is to allow residual amounts of magnesium to remain between individual depressions similar to a thin skin so that the pellets generated remain connected as they exit the device. This connection may be desirable if it is advantageous for subsequent handling, e.g., if pellets must be individually metered and
25 precisely fed into the casting machine. Provision may be made, however, to immediately remove the pellets formed in the depressions from the device so that they are ready for immediate processing and may either be packaged or processed in a casting machine.

30 Fig. 2 shows a second embodiment in which both cooling bodies 1 are of link-chain or conveyor-belt design and move around two guide rollers 9. This approach creates a comparatively long gap 4. The device in Fig. 2 is arranged horizontally to save overall height. Unlike this embodiment, however, a device of analogous design may also be arranged vertically so that the movement of the magnesium is gravity-assisted. As with the device in Fig. 1, the actual cooling device for the device of Fig. 2 is not shown
35 in detail for reasons of clarity.

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- The long gap 4 of the embodiment in Fig. 2 allows for a high throughput for this device due to the high cooling performance obtainable. During the design phase for this device, it is a simple matter to specify the desired degree of partial or complete solidification for the magnesium based on the appropriate length of cooling bodies 1, whereas with the embodiment of Fig. 1 the circumferential speed of the two roller-shaped cooling bodies 1 is limited by the specified degree of solidification.

- As explained above, the surface design of cooling bodies 1 in the embodiment of Fig. 2 may be created with projecting ridges 7 or molded depressions, as indicated schematically, and in this embodiment of a device according to the invention as well, the final separation of the individual pellets may be achieved in the device itself or subsequently in a specially provided crusher along the appropriate attenuation lines 6 which are indicated schematically.

- In the devices of both Fig. 1 and Fig. 2, an additional feed unit, e.g., for granular or powder-type particles or fibers may be provided. Examples of possible granular or powder-type particles are those of SiC , Al_2O_3 , or carbon. The method of feed for the particles or fibers may be to add these to the molten metal or to add them to the molten metal up to a point immediately before gap 4 such that a specified distribution of particles or both fibers and molten magnesium is assured – and thus the consistency of the product as well. Fibers may as required be added in loose form as bulk material, or as nonwoven, woven or knit material, or in analogous form such that this method of adding the fibers ensures especially uniform product characteristics for the fiber-containing pellets. An especially advantageous method may be to homogeneously distribute the particles or fibers at an external site, e.g., by mechanical or induction stirring.

Claims

1. Method for producing light-metal pellets, in which molten light metal is fed into a gap between two cooling bodies, and in which the molten light metal is divided up into pellets of specified size along attenuation lines or by completely separating them before it completely solidifies, characterized in that fibers, particles or similar additives are added before the molten light metal (3) enters the gap (4).
2. Method according to claim 1, characterized in that the cooling bodies (1) move synchronously and are starting from an initial arrangement in which their surfaces are spaced a certain distance from each other, then move into a second arrangement in which their surfaces move close together to form the gap (4), and subsequently move back into the spaced arrangement.
3. Method according to claim 2, characterized in that the motion from the initial to the third arrangement of the cooling bodies (1) occurs from top to bottom, the molten light metal (3) being fed into a funnel (2) formed between the cooling bodies (1).
4. Method according to one of the foregoing claims, characterized in that first a strip exiting from the cooling bodies is generated which consists of connected pellets, and that this strip is not broken up into individual pellets until a later stage.
5. Method according to one of the foregoing claims, characterized in that magnesium is utilized as the light metal.
6. Device for implementing the method according to one of the foregoing claims, characterized in that the cooling bodies (1) have depressions on their opposing faces such that the molten light metal (3) between the two cooling bodies (1) may be formed into pellets of the shape determined by the depressions.
7. Device for working the method according to one of claims 1 through 5, characterized in that the cooling bodies (1) have the form of conveyor belts with two reversing points each and a cooling zone provided between them along which the two cooling bodies (1) form the gap (4) or are in contact with one another.
8. Utilization of a device in which the two cooling bodies (1) have ridges (7) projecting from their opposing faces, such that the molten light metal (3) between the

two cooling bodies (1) may be formed into pellets (8), which are separated by the ridges (7), to work the method according to one of claims 1 through 5.

9. Utilization of a device in which the two cooling bodies (1) are designed
5 as two wheels or rollers which are arranged adjacent to or contact one another so as to form the gap (4) with their circumferential edges, to work the method according to one of claims 1 through 5.

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**DECLARATION, PETITION AND POWER OF ATTORNEY
FOR PATENT APPLICATION**

(Check one):

- ☐ Declaration Submitted with Initial Filing
☒ Declaration Submitted after Initial Filing

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**METHOD AND DEVICE FOR THE PRODUCTION OF LIGHT-METAL
PELLETS**

the specification of which (check one):

- ☐ is attached hereto.
OR
☒ was filed on **21 November 2000** as PCT International Application Number **PCT/DE00/04134** and filed as **U.S. Serial No. 09/889,916**.
☐ and was amended by PCT Article 19 Amendment on _____
(if applicable),
☐ and was amended by PCT Article 34 Amendment on _____
(if applicable).

I acknowledge the duty to disclose to the Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

I hereby state that I have reviewed and understood the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

PRIORITY CLAIM

(Check one):

- ☐ no such applications have been filed.
- ☒ such applications have been filed as follows

1) FOREIGN PRIORITY CLAIM: I hereby claim foreign priority benefits under Title 35, United States Code, §119(a)-(d) or §365(b) of any foreign application(s) for patent or inventor's certificate or §365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (mm.dd.yyyy)	Priority Not Claimed	Certified Copy Attached	
				Yes	No
199 56 479.5	DE	24 November 1999 (24.11.99)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority sheet attached hereto.

2) PROVISIONAL PRIORITY CLAIM: I hereby claim the benefit under Title 35, United States Code §119(e) of any United States provisional application(s) listed below.

Provisional Application Number(s)	Filing Date (mm/dd/yyyy)

☐ Additional provisional application numbers are listed on a supplemental priority sheet attached hereto.

3) U.S./PCT PRIORITY CLAIM: I hereby claim the benefit under Title 35, United States Code, §120 of any United States application or §365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information which is known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application Number	PCT Parent Number	Parent Filing Date (mm/dd/yyyy)	Parent Patent Number (if applicable)
	PCT/DE00/04134	21 November 2000 (21.11.00)	

☐ Additional U.S. or PCT international application numbers are listed on a supplemental priority sheet attached hereto.

POWER OF ATTORNEY:

As a named inventor, I hereby appoint the following attorneys and/or agents to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

James E. Cockfield	Reg. No. <u>19,162</u>	Megan E. Williams	Reg. No. <u>43,270</u>
Thomas V. Smurzynski	Reg. No. <u>24,798</u>	Nicholas P. Triano III	Reg. No. <u>36,397</u>
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Ann Lamport Hammitte	Reg. No. <u>34,858</u>	Maria C. Laccotripe	Limited Recognition
Elizabeth A. Hanley	Reg. No. <u>33,505</u>		Under 37 C.F.R. § 10.9(b)
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Wherefore I petition that letters patent be granted to me for the invention or discovery described and claimed in the attached specification and claims, and hereby subscribe my name to said specification and claims and to the foregoing declaration, power of attorney, and this petition.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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